SURGICAL CLIP APPLIER WITH DISSECTOR

CROSS REFERENCE TO RELATED APPLICATION

The present application claims the benefit of and priority to U.S. Provisional Application Ser. No. 61/642,617, filed on May 4, 2012, the entire contents of which are incorporated herein by reference.

BACKGROUND

1. Technical Field

The present application relates to surgical instruments, and more particularly, to surgical clip appliers having a plurality of clips for applying the clips to body tissues and vessels during surgical procedures, and an incorporated dissector.

2. Discussion of Related Art

Surgical clip appliers are known in the art and have increased in popularity among surgeons by offering an alternative to conventional suturing of body tissues and vessels. Typical instruments are disclosed in U.S. Pat. No. 5,030,226 to Green et al. and U.S. Pat. No. 5,431,668 to Burbank III et al. These instruments generally provide a plurality of clips which are stored in the instrument and which are fed sequentially to the jaw mechanism at the distal end of the instrument upon opening and closing of the handles at the proximal end of the instrument. As the handles are closed, the jaws close to deform a clip positioned between the jaw members, and as the jaws are opened to release the deformed clip, a new clip is fed from the series to a position between the jaws. This process is repeated until all the clips in the series of clips have been used.

During surgical procedures, it is often desirable to use a dissector or the like to separate organs or vessels from underlying or overlying tissue, connective tissue or the like. At times, the surgical clip applier is used in lieu of a separate surgical instrument (e.g., dissector) in order to perform the function of separating of the organs or vessels from the underlying or overlying tissue, connective tissue or the like. In doing so, the surgical clip applier may become gummed up, or the jaws of the surgical clip applier may be splayed out of alignment thereby effecting a formation of surgical clips.

Accordingly, a need exists for a single surgical instrument that can apply surgical clips and that can perform the function of surgical dissection without effecting the construction and/or operation of the clip applying features.

SUMMARY

The present application relates to surgical clip appliers having a plurality of clips for applying the clips to body tissues and vessels during surgical.

According to an aspect of the present disclosure, a surgical clip applier for performing a surgical procedure is provided and includes a housing; at least one handle pivotably connected to the housing; a channel assembly extending distally from the housing; a jaw assembly including a pair of jaws extending from an end of the channel assembly, opposite the housing, the jaw assembly adapted to accommodate a clip of a plurality of clips loaded in the clip applier and being operable to effect formation of the clip in response to movement of the at least one handle; and a dissector bar supported on the housing and the channel assembly, wherein the dissector bar is actuatable from the housing and includes a proximal position wherein a distal end of the dissector bar is disposed proximal of a distal-most end of the jaw assembly, and at least one distal position wherein the distal end of the dissector bar projects beyond the distal-most end of the jaw assembly.

The dissector bar may include a proximal-end portion at least partially slidably supported in the housing, and a distal-end portion extending from the housing and along a length of the channel assembly. The dissector bar may include a dissector extending distally from the distal-end portion thereof. The dissector may include a pair of transversely spaced-apart fingers extending in at least a substantially distal direction. The pair of fingers may be spaced apart by a transverse distance not to exceed a width of the channel assembly.

In use, when the dissector bar is in the proximal position, a distal end of the pair of fingers of the dissector bar do not extend beyond the distal-most end of the jaw assembly.

In use, when the dissector bar is in a distal position, at least a portion of a length of the pair of fingers of the dissector bar extend beyond the distal-most end of the jaw assembly.

The dissector bar may include a knob supported near the proximal-end thereof, and wherein the knob may extend through a slot formed in the housing. The slot formed in the housing may have a length and a width, and wherein the knob may have a transverse width that is greater than the width of the slot.

At least one side wall of the slot of the housing may include a resilient, deformable layer extending along a length thereof.

The elongate slot of the housing may define a plurality of discrete pockets defined by a plurality of discrete ridges formed along a length of the slot, wherein the ridges may extend into the slot toward the knob.

The ridges may extend by an amount sufficient to define ledges, wherein when the knob is disposed between adjacent ledges the knob is inhibited from distal and proximal movement and the dissector bar is held in place relative to the housing and channel assembly.

According to a further aspect of the present disclosure, a method of performing a surgical procedure is provided and includes the step of providing a surgical clip applier for applying at least one surgical clip to a target surgical site. The surgical clip applier includes a housing; at least one handle pivotably connected to the housing; a channel assembly extending distally from the housing; a jaw assembly including a pair of jaws extending from an end of the channel assembly, opposite the housing, the jaw assembly adapted to accommodate a clip of a plurality of clips loaded in the clip applier and being operable to effect formation of the clip in response to movement of the at least one handle; and a dissector bar supported on the housing and the channel assembly, wherein the dissector bar is actuatable from the housing and includes a proximal position wherein a distal end of the dissector bar is disposed proximal of a distal-most end of the jaw assembly, and at least one distal position wherein the distal end of the dissector bar projects beyond the distal-most end of the jaw assembly.

The method further includes the steps of actuating the dissector bar to extend the distal end of the dissector bar distally beyond the distal-most end of the jaw assembly; and performing a dissecting function at a desired target site with the distal end of the dissector of the surgical clip applier.

The dissector bar may include a proximal-end portion at least partially slidably supported in the housing, and a distal-end portion extending from the housing and along a length of the channel assembly, and wherein the method may further include the step of slidably actuating the dissector bar.

The dissector bar may include a dissector extending distally from the distal-end portion thereof, wherein the dissector may include a pair of transversely spaced-apart fingers extending in at least a substantially distal direction. The pair